

Design Standards for Small Wireless Facilities on Poles in the Public Place

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A. Introduction

1. This document establishes the City's design standards for small wireless facilities on poles in the public place (also known as right-of-way) for which there is a valid lease or wireless site agreement, including those poles that are owned in whole or in part by the City, and privately-owned poles in the public place.
2. Small wireless facilities not installed in the public place are not subject to these requirements, but these standards may inform those installations.

B. Definitions

1. "Accessory equipment" means any equipment appurtenant to an antenna's operation including but not limited to risers, external facing antennas, electrical service disconnect, electrical meter, or remote radio heads on poles in the public place.
2. "Antenna" means a system of electrical conductors that emit or receive radio frequency waves. (SMC 25.10.210)
3. "Areaway" means a space below the level of the sidewalk or public place, covered or uncovered, affording room, access, or light to a building. An "areaway" is sometimes called a "light well." (SMC 15.02.042.D)
4. "Pedestrian light poles" means a pole that illuminates the sidewalk and is generally less than 18 feet tall, measured from ground level. Poles that include both pedestrian and street lighting are not considered to be "pedestrian light poles" for the purpose of this definition.
5. "Pole" means either a City-owned pole or a privately-owned pole.
6. "Pole, City-owned" or "City-owned pole" means a pole owned in whole or in part by the City.
7. "Pole, privately-owned" or "privately-owned pole" means a pole owned in whole by a non-City entity, including other structures used to support wireline or wireless attachments.
8. "Public place" means public right-of-way and the space above or beneath its surface, whether or not opened or improved, including streets, avenues, ways, boulevards, drives, places, alleys, sidewalks, planting strips, squares, triangles, and plazas that are not privately owned. (SMC 15.02.046)
9. "Minor communication utility" means a utility use in which the means for transfer of information are provided but which generally do not have significant impacts beyond the immediate area. These facilities are smaller in size than major communication utilities and include phone cable vaults; two (2) way, land, mobile, and cellular communications facilities; cable TV facilities; point-to-point microwave dishes; FM translators; and FM boosters with less than ten (10) watts' transmitting power. (SMC 25.10.220) Small wireless facilities are considered minor communication utilities where that term is used in the SMC.
10. "Wireless facility, small" or "small wireless facility" means a type of wireless attachment where each antenna is no greater than 3 cubic feet in volume and associated accessory equipment is no greater than 28 cubic feet in volume.

C. Standards applicable to small wireless facilities on wood poles

1. The small wireless facilities shall comply with the wood pole design standards in Table C.1 below, the general design standards in section E, and the pole owner's standards.

Table C.1. Wood Pole Design Standards

Height	<p>The maximum height allowed of any replacement pole shall not extend more than 10 feet above the height of the standard replacement pole or the minimum additional height required for adequate clearance from electrical wires, whichever is greater. Any height increase above 10 feet shall be the minimum extension necessary to provide a required clearance up to a maximum of 5 feet of additional height and shall be confirmed in writing by the pole owner.</p> <p>The maximum height allowed shall include the small wireless facility.</p>
Antenna	<p>A wood pole may include one top-mount canister antenna or one side-mount canister antenna. If a top-mount canister antenna is proposed, there may be up to 3 additional side-mounted panel antenna enclosures lower on the pole.</p>
Top-Mount Canister Antenna	<p>The top-mount canister antenna shall be placed to look as if it is an extension of the pole. All cables shall be concealed either within the canister antenna or a sleeve between the canister antenna and the pole. The canister antenna's outer diameter may not be more than 16 inches diameter maximum. The canister antenna shall be no more than 3 feet tall, including the antenna, radio head, mounting bracket, and all other equipment necessary for installation. Unless technically infeasible, all equipment shall be placed within the canister, attachments shall not be attached to the outside of the canister antenna. The carrier is permitted to have the minimum amount of fiber between the conduit to the antenna and the equipment box.</p>
Side-Mount Antenna	<p>Side-mount antennas are permissible provided they are 15 feet 6 inches above grade and do not extend more than 22 inches off the pole, measured at the outer edge of the antenna. Side-mount antennas shall not exceed 3 feet in height and shall be placed such that the top of the side-mount antenna does not extend above the height of the wooden pole. Panel antennas shall be located at least 12 inches below the streetlight or streetlight arm and antennas shall not interfere with the intended illumination pattern.</p> <p>One side-mount canister antenna or up to a maximum of three panel antenna enclosures may be permitted, provided that each antenna enclosure shall not be greater than 3 cubic feet in volume. The carrier is permitted to have the minimum amount of fiber between the conduit to the antenna and the equipment box.</p>
Pole Diameter	<p>The replacement pole's diameter shall not increase more than the minimum extent necessary. All pole diameters shall comply with</p>

	<i>Streets Illustrated</i> and the pole placement shall meet <i>Streets Illustrated</i> and ADA requirements.
Accessory Equipment Location	All accessory equipment, except the disconnect, shall be undergrounded or mounted inside a cabinet lower on the pole. The equipment shall be placed in the smallest enclosure feasible for the intended purpose. Only one cabinet, not including the disconnect, is allowed. The pole-mounted cabinet, minus the disconnect, shall be no greater than 48 inches long by 21 inches wide by 20 inches deep. All pole-mounted accessory equipment shall be 15 feet 6 inches above the ground and shall extend no more than 25 inches off the pole, measured at the outer edge of the associated equipment enclosure. All small wireless facility equipment associated with the site, including wireless equipment associated with the antenna and any pre-existing equipment associated with the site, any required meters, and conduit, shall be no more than 28 cubic feet.
Cabling and Conduit	A maximum of two telecommunications conduits and one power conduit, colored or painted to match the pole, shall be permitted. The conduit shall be the minimum dimension necessary, up to a maximum of 4 inches in diameter for telecommunications and 2 inches in diameter for power. Shrouds, risers, or conduits shall be used to reduce the appearance of cluttered or tangled cabling. Excessive cable slack, loops, or bends in flex conduit are prohibited.

D. Standards applicable to small wireless facilities on metal poles

1. The small wireless facility attachment shall comply with the metal pole design standards in Table D.1 below, the general design standards in section E, and the pole owner's standards.

Table D.1: Metal Pole Design Standards

Height	The height of any replacement pole shall not extend more than 5 feet above the height of the standard replacement pole. The maximum height allowed shall include the small wireless facility.
Antenna	Either top-mount canister antennas or panel antennas are allowed on metal poles.
Panel Antenna	<p>Panel antennas are permissible provided they are at least 15 feet 6 inches above grade, no taller than 36 inches, and no further than 16 inches from the pole's surface measured at the antenna's outer edge. Panel antennas shall be flush mounted to the pole (and in no case greater than 6 inches off the pole to allow for antenna tilt). Panel antennas shall be located at least 12 inches below the streetlight or streetlight arm and antennas shall not interfere with the intended illumination pattern.</p> <p>Multiple panel antennas, up to a maximum of three antenna enclosures, may be permitted provided that each antenna enclosure shall not be greater than 3 cubic feet in volume.</p>

Top-Mount Canister Antenna	<p>The canister antenna shall be placed to look as if it is an extension of the pole. If the canister antenna is wider than the top of the pole, a tapered transition between the upper pole and canister antenna is required, unless the applicant demonstrates that a non-tapered transition is less visually impactful. The canister antenna's outer diameter shall not be more than 1/3 larger than the diameter of the pole, up to a maximum of 16 inches. The canister antenna shall be no taller than 3 feet in height and must fit within the maximum height allowed for the pole (5 feet above standard replacement pole). The canister antenna shall include the antenna, radio head, mounting bracket, and all other equipment necessary for installation. All cables shall be concealed either within the canister antenna or a sleeve between the canister antenna and the pole. Canister antennas cannot be located on any pole with a post-top streetlight. Unless technically infeasible, all accessory equipment shall be placed within the canister, attachments shall not be attached to the outside of the canister antenna.</p> <p>For Chief Seattle poles, top-mount canister antennas may be considered, but the standard Aladdin Arm design elements shall be retained in the proposed design.</p>
Pole Diameter	<p>The replacement pole's diameter shall not increase more than the minimum extent necessary. For poles 12 inches and greater, a pole diameter increase shall be no greater than a 25% increase of the existing pole measured at the base of the pole. Poles less than 12 inches in diameter may increase to be a maximum of 12 inches in diameter. All pole diameters shall also comply with <i>Streets Illustrated</i> and the pole placement shall meet <i>Streets Illustrated</i> and ADA requirements.</p> <p>Decorative or ornamental pole bases, including but not limited to the Chief Seattle base, shall not be increased in height or width. Reuse of existing bases shall be prioritized.</p>
Accessory Equipment Location	<p>All accessory equipment, except for the disconnect, shall be underground or mounted inside a cabinet lower on the pole. The equipment shall be placed in the smallest enclosure feasible for the intended purpose. Only one cabinet, not including the disconnect, is allowed. The cabinet, minus the disconnect, shall be no greater than 48 inches long by 16 inches wide by 16 inches deep. All pole-mounted equipment shall be at least 15 feet 6 inches above the ground. The equipment enclosure and all other wireless equipment associated with the pole, including wireless equipment associated with the antenna and any pre-existing equipment associated with the site, any required meters, and conduit, may not exceed 28 cubic feet. If technically possible, enclosures should be sited behind any banners or road signs on the pole. Accessory equipment must be placed in a manner that maintains all required clear sight lines to any regulatory signs.</p>

Cabling and Conduit	All conduit, cables, wire, and fiber shall be routed internally in the pole. Where conduit, cables, wires, and fiber attach to exterior equipment, full concealment within mounting brackets, shrouds, canisters or sleeves is required to the maximum extent physically feasible. The carrier is permitted to have the minimum amount of fiber to the antenna and the equipment box. Where externally attached, cables, wires, and fiber shall match the pole color. Excessive cable slack or loops are prohibited.
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E. Standards applicable to small wireless facilities on all poles in the public place

1. Location preferences

- a. Small wireless facility attachments are discouraged on poles that are:
 - i. Within the [Waterfront Seattle Project Area](#)
 - ii. Within Parks' Boulevards
 - iii. Within Historic or Landmark Districts
 - iv. Adjacent to a designated Landmark
- b. If a site is selected in a location listed in (a) above, the applicant shall submit documentation that location preferences have been evaluated to the satisfaction of the City. The applicant must demonstrate that the small wireless facility cannot be located outside of the areas in (a) above on an existing or replacement pole or on a structure located within 500 feet from the proposed site.
- c. The City prohibits small wireless facilities attached to the following:
 - i. Poles within medians or traffic circles or islands;
 - ii. SDOT traffic and pedestrian signal poles;
 - iii. Poles 20 feet in height or under, including pedestrian light poles;
 - iv. Poles with globe-light luminaires;
 - v. Decorative poles, unless the City determines it fits within the streetscape design plan or the City would replace the pole with a standard pole upon replacement;
 - vi. Poles within an [Approved Street Concept Plan](#) area identified in *Streets Illustrated*, unless the City determines it fits within the street concept plan
- d. Small wireless facilities shall comply with SMC 23.60A, Seattle Shoreline Master Program Regulations.
- e. New privately-owned poles where the primary purpose for the pole is to support small wireless facilities are not allowed unless the City agrees to take ownership upon installation or if authorized by ordinance.

2. Context and placement

- a. The small wireless facility installation shall comply with all applicable federal, state, and City codes, laws, standards, and regulations; and the pole owner's requirements.
- b. The small wireless facility installation and all equipment located in the public place shall be located so it meets *Streets Illustrated* standards, or successor rule, and ADA requirements, and it shall not obstruct, impede, or hinder usual pedestrian, bicycle, or vehicular travel.
- c. Replacement poles shall match the approximate design, color, and materials of the existing pole, unless the new pole fits within the streetscape design plan or the City would replace the pole with a standard pole upon replacement. The replacement pole shall be located as

close as feasible to the existing pole, provided that it meets the requirements of (b) above, and the existing pole shall be removed.

- d. While orientation of antennas and other equipment may be limited by operational requirements, to the maximum extent feasible, equipment shall be oriented away from the greatest number of adjacent windows, doorways, or entrances.
- e. The use of a pole for the siting of a small wireless facility shall be considered secondary to the primary function of the pole. If the primary function of a pole serving as a host site for a small wireless facility becomes unnecessary, the pole shall not be retained for the sole purpose of accommodating the small wireless facility and the small wireless facility and all associated equipment shall be removed at no cost to the City.

3. *Concealment*

- a. Antennas and equipment shall match the aesthetics of the pole and surrounding poles.
- b. All antennas, equipment enclosures, and all visible accessory equipment shall be colored to match the approximate color of the pole surface. All equipment associated with the small wireless facility shall be subdued and non-reflective.
- c. To the extent technically feasible, the least visible equipment, colors, finishes, brackets, and configuration shall be used.
- d. Accessory equipment's impact to the public place shall be minimized by undergrounding or pole-mounting equipment to the maximum extent feasible. Areaways are included in Landmark and Historic District regulations and modifications to the areaway to accommodate small wireless facilities and accessory equipment will trigger Landmark or Historic District review. Where pole-mounted accessory equipment is proposed, the applicant shall screen equipment to the maximum extent feasible. At-grade accessory equipment may be considered only where undergrounding or pole-mounted equipment is not technically feasible. At-grade communication cabinets shall also comply with the requirements of SMC 15.32.200 and 15.32.250.

4. *Noise and lighting*

- a. Small wireless facilities and accessory equipment, including but not limited to cooling fans, are required to comply with City noise standards (SMC 25.08) ([http://www.seattle.gov/sdci/codes/codes-we-enforce-\(a-z\)/noise-code](http://www.seattle.gov/sdci/codes/codes-we-enforce-(a-z)/noise-code))
- b. Lighting specific to the small wireless facility is not permitted except as required by the Federal Aviation Administration.

5. *Radio Frequency (RF) equipment disconnect and warning labels on the poles*

- a. The small wireless facility shall comply with applicable federal laws, rules, regulations, and standards regarding radio frequency radiation.
- b. Radio frequency equipment shall have a disconnect that meets or exceeds the pole owner's requirements.
- c. If required, radio frequency warning labels shall be mounted to the exterior of the small wireless facility. They shall be placed facing toward the street and away from the adjacent buildings and windows, and shall contain a site identification number, carrier name, and emergency phone number.
- d. Signage and warning stickers shall be no larger than 5 inches by 7 inches and shall be located on or near the site disconnect. Other signs, logos, or advertising devices are

prohibited, except for certification and warning signage required by law or permitted by the City.

6. *Underground Ordinance Areas*

- a. Certain areas in the City have been designated as underground ordinance areas. There may still be overhead electrical distribution poles or other poles supporting overhead wires in some of these areas.
- b. Proposals in these areas must conform with the specific underground ordinance for that area and may be considered if in conformance with the ordinance and until the point the area is undergrounded. All carrier equipment shall be removed and relocated at no cost to the City if the City or pole owner decides to underground utility lines in the future. The equipment must be removed within 30 days upon notification or as determined by the pole owner.

7. *Proposal review*

- a. Small wireless facility attachments must adhere to all applicable federal, state, and City codes, laws, standards, and regulations, including but not limited to the National Electrical Safety Code; SMC Title 15 (Street and Sidewalk Use), SMC Title 23 (Land Use Code); and SMC Title 25 (Environmental Protection and Historic Preservation).
- b. All small wireless facility attachments to poles shall be approved by the pole owner prior to installation. If there is a design standard that creates an operational impediment to the pole owner, the City may consider an exception upon written confirmation by the pole owner.
 - i. All equipment on SCL poles shall meet 0095.15 Pole Attachments, Small Cell Antennas and Distributed Antenna System Below Distribution Conductors, 0095.20 Pole Attachments, Pole Top Cellular Antennas, 0095.50 Requirements for Small Cell Antenna on Streetlights, and the Joint Use Handbook or successor standards. See SCL Standard Publications website.
- c. Attachments to poles owned by King County Metro, or to poles under 50 feet in height that are co-owned by King County Metro and the City, require approval from King County Metro.
- d. The City shall review all small wireless facility attachments to determine whether they comply with these design standards.
 - i. Applications for small wireless facilities in non-preferred locations identified in Section E.1.a above may be approved if (1) the applicant provides evidence that due to technical infeasibility or unavailability the applicant cannot locate the proposed small wireless facility on an existing or replacement pole within 500 feet of the proposed site and outside of these areas and (2) the applicant has approvals listed in (ii) below.
 - ii. These design standards serve as minimum requirements for proposals in the following areas, and additional requirements may be applied to proposals:
 1. Small wireless facilities located in the Seattle Waterfront Project Area. The applicant must have the Office of the Waterfront (or subsequent approval authority) written approval at time of application. *(Note: There will be standards specific to the Waterfront Project Area included in a future draft.)*
 2. Small wireless facilities located in Historic or Landmark Districts or adjacent to a designated Landmark, and additional requirements may be applied to proposals. Proposals located in a Landmark District or Historic District or

adjacent to a designated Landmark, shall include a copy of the Certificate of Approval as required by SMC Title 23 or Title 25.

3. Small wireless facilities located in the Parks' Boulevards. The applicant must have Parks' written approval at time of application.
- e. Proposals that deviate from these standards are subject to additional City review and approval, which may include Design Commission review.
 - i. For any proposal subject to Design Commission review or at the discretion of the City pole owner, photo simulations, full-scale mock-ups, or other visual aids may be required as part of the review process.
 - ii. If Design Commission review is required, their recommendation shall be required prior to the City's approval.
 - iii. The Design Commission may recommend approval of a new pole or attachment design not contemplated in these design standards. At the discretion of the City, these new designs may be incorporated into these design standards as an approved design standard by the rulemaking process (SMC 3.02). Alternatively, the Design Commission may recommend approval for an individual proposal that is accepted by the City as appropriate for that context, without updating these design standards.
 - f. These design standards are intended to be used solely for the purpose of concealment and siting. Nothing in these standards shall be interpreted or applied in a manner that dictates the use of a particular technology, nor prohibits or has the effect of prohibiting the deployment of wireless services.